EXHIBIT B

Patent Claims Analysis

of

US10127818 B2: "Systems and methods for detecting and avoiding an emergency vehicle in the proximity of a substantially autonomous vehicle"

against

Lyft and Motional- Self Driving Cars

US10127818B2

United States

Inventor Ben Mandeville-Clarke

Current Assignee Autonomous Future Industries Pty Ltd

Worldwide applications

2017 US

Application US15/626,077 events

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2018-11-13	Application granted
2018-11-13	Publication of US10127818B2
Status	Active - Reinstated
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Owner name: AUTONOMOUS FUTURE INDUSTRIES PTY LTD, AUSTRALIA

Free format text: ASSIGNMENT OF ASSIGNORS INTEREST;ASSIGNOR:MANDEVILLE-CLARKE, BEN;REEL/FRAME:061965/0608

Effective date: 20221205

CLAIMS

1. A system comprising

a processor and a non-transient computer-readable storage medium,

wherein the processor and the non-transient computer-readable storage medium are at least one of connected or communicatively coupled via a data channel,

the system comprising:

program instructions stored on the non-transient computer-readable storage medium, the non transitory program instructions operable to during a first time period:

process a first pre-determined location for the a substantially autonomous vehicle to navigate to,

wherein the first pre-determined location is retrieved at least in part from a first electromagnetic signal, and further wherein the first pre-determined location corresponds to an first input signal registered at a first user-interface of a first mobile communications device being physically separate to the substantially autonomous vehicle;

initiate a first path planning;

navigate the substantially autonomous vehicle towards the first pre-determined location;

process an interruption signal retrieved at least in part from a second electromagnetic signal,

wherein the interruption signal interrupts the substantially autonomous vehicle from navigating to the first pre-determined location: and further wherein the interruption signal is processed

immediately prior to processing a first braking instruction and a first data decrypting instruction

and immediately consecutive to processing a control data packet:

recognize the interruption signal corresponds to a third party system foreign to the substantially autonomous vehicle; and

wherein the interruption signal is indicative of a cancellation of a requirement for the substantially autonomous vehicle to navigate to the first pre-determined location, and

further wherein the interruption signal corresponds to an second input signal registered at the first user-interface of the first mobile communications device;

immediately and ire direct response to the processing of the interruption signal,

process a second pre-determined location for the substantially autonomous vehicle to navigate to and perform a second path planning for the second pre determined location, wherein the second pre-determined location is retrieved at least in part from a third electromagnetic signal and further

wherein the second pre-determined location corresponds to a second input signal registered at a second user-interface of a second mobile communications device being physically separate to the substantially autonomous vehicle:

program instructions stored on the non-transient computer-readable storage medium, the non-transitory program instructions operable to during a second time-period:

process a third-predetermined location for the substantially autonomous vehicle to navigate to,

wherein the third predetermined location is retrieved at least M part from a fourth electromagnetic signal and further

wherein the third pre-determined location corresponds to a third input signal registered at a third user interface of a third mobile communications device being physically separate to the substantially autonomous vehicle:

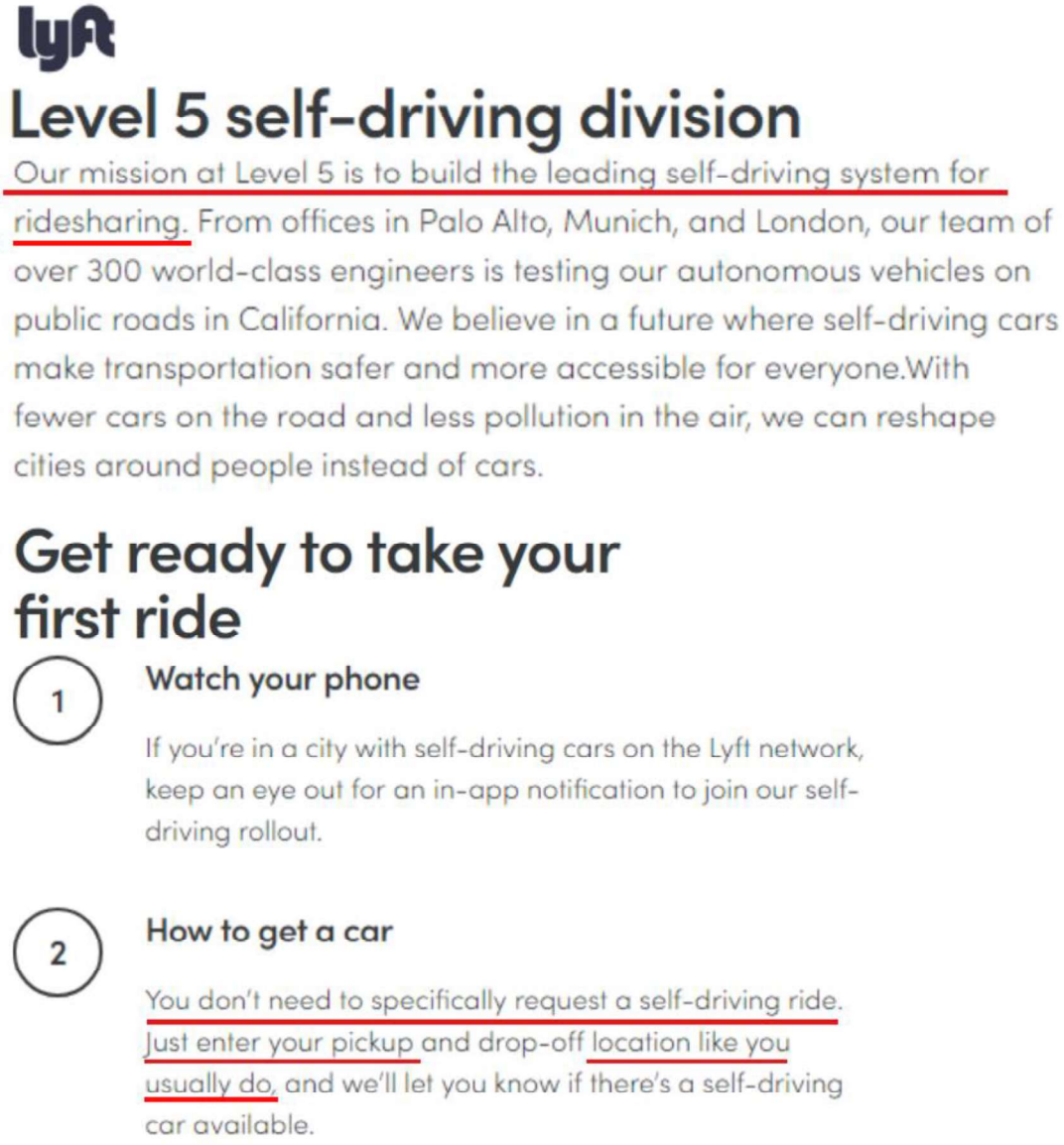
initiate a third path planning;

navigate the substantially autonomous vehicle towards the third pre-determined location:

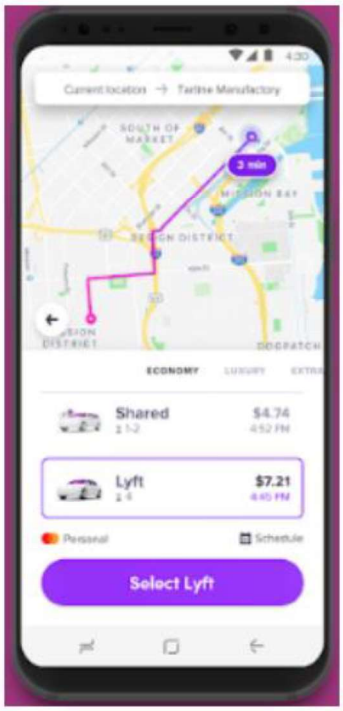
identify an emission that corresponds to an emergency vehicle from an aspect of a captured empirical data

manoeuvre the substantially autonomous vehicle to avoid obstructing a route of the emergency vehicle; and

wherein the manoeuvre occurs wherein the substantially autonomous vehicle is greater than 20.2 to 22.5 meters from the third pre-determined location, and wherein the manoeuvre is performed at a speed of between 0.0001 km/h and 130 km/hr.

US10127818 B2 **Claim 1**	**Lyft and Motional - Self Driving Cars**
1. A system comprising	 <https://www.lyft.com/self-driving-vehicles/engineers> <https://www.lyft.com/self-driving-vehicles/passengers>

<https://www.lyft.com/self-driving-vehicles/passengers>



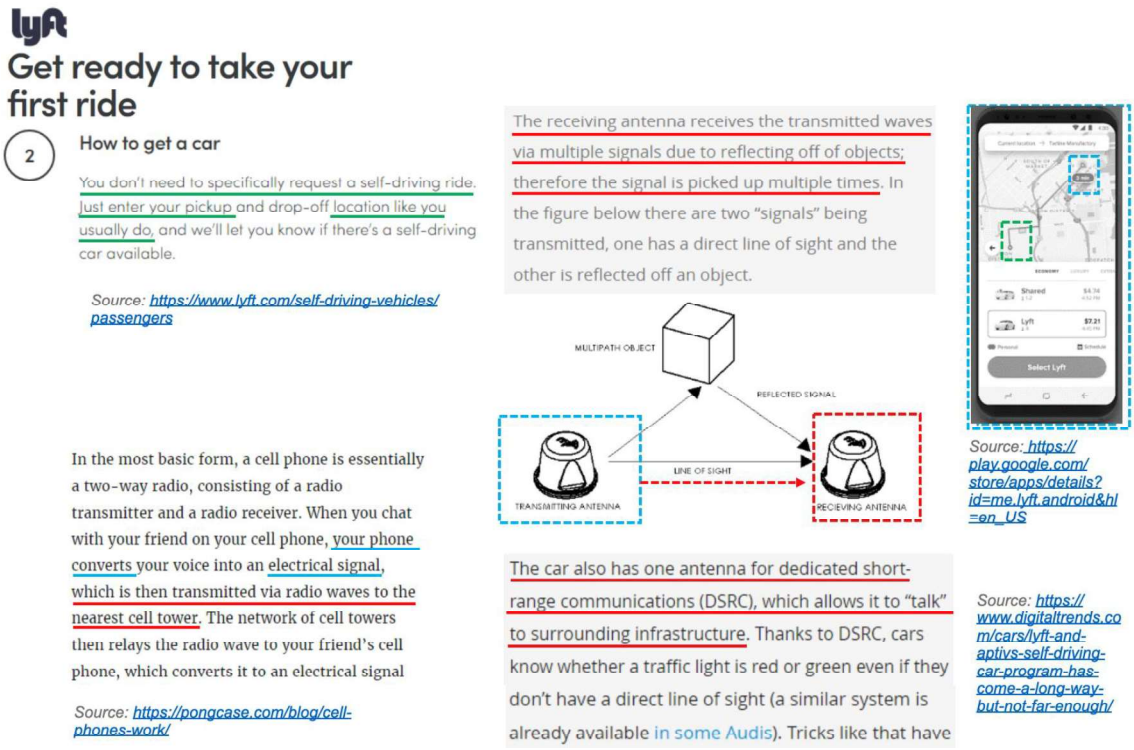
<https://play.google.com/store/apps/details?id=me.lyft.android&hl=en_US>

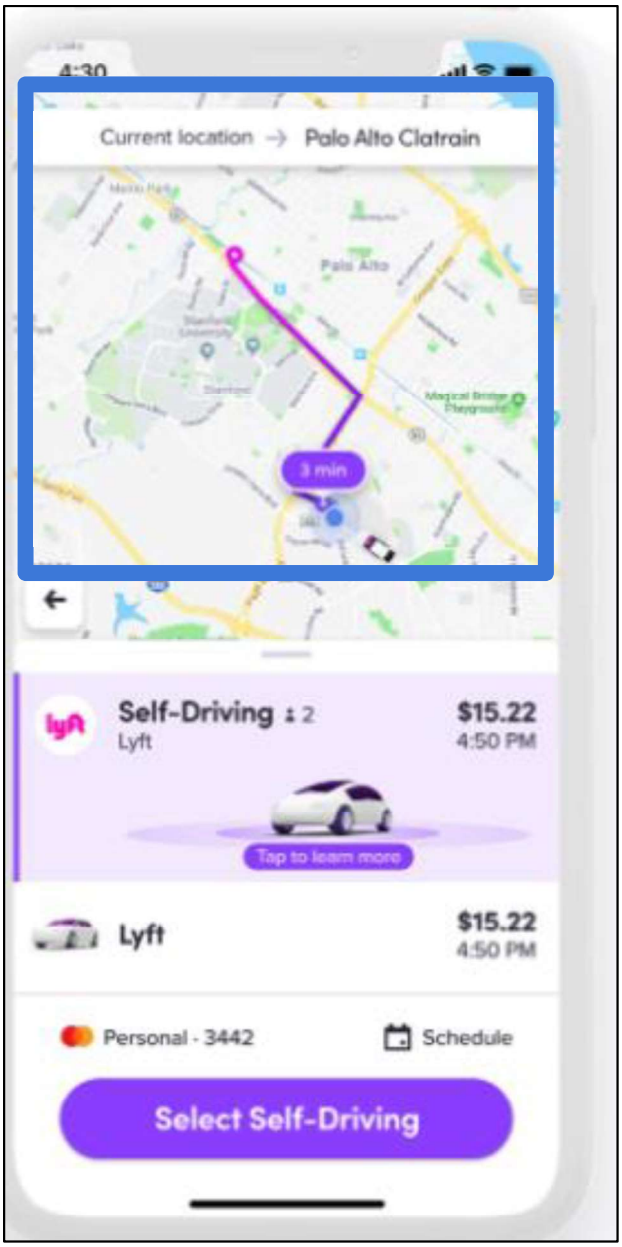
Lyft - Self Driving Cars is/has a system.

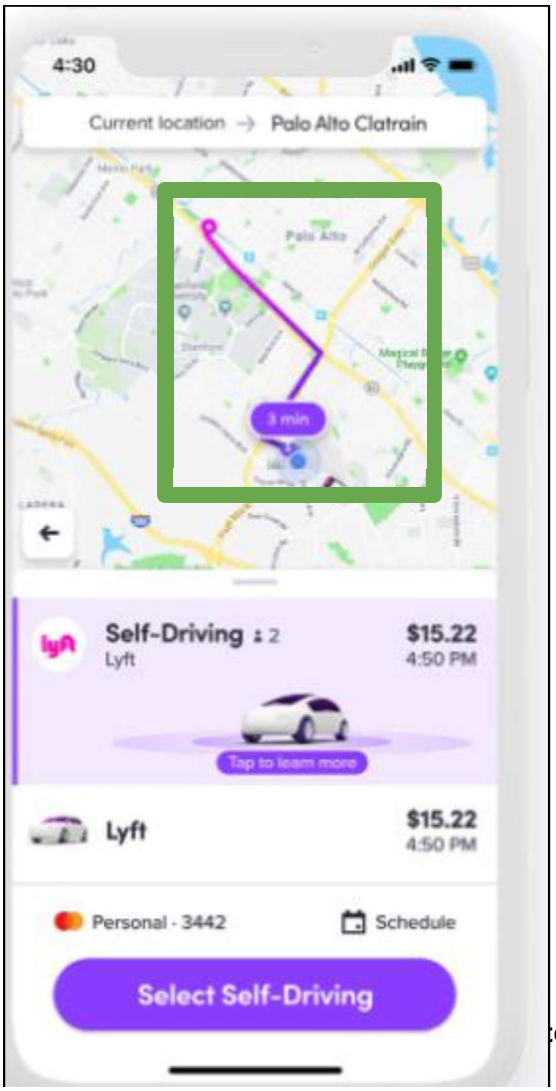
US10127818 B2 **Claim 1**	**Lyft and Motional- Self Driving Cars**
a processor and a non-transient computer-readable storage medium, wherein the processor and the non-transient computer-readable storage medium are at least one of connected or communicatively coupled via a data channel,	**Level 5 self-driving division** Our mission at Level 5 is to build the leading self-driving system for ridesharing. From offices in Palo Alto, Munich, and London, our team of over 300 world-class engineers is testing our autonomous vehicles on public roads in California. We believe in a future where self-driving cars make transportation safer and more accessible for everyone.With fewer cars on the road and less pollution in the air, we can reshape cities around people instead of cars. *Source: https://www.lyft.com/self-driving-vehicles/engineers* A notable change from 2017 when just a handful robotic vehicles were available for parking lot rides: There are lots roaming Las Vegas this year. The biggest fleet was operated by Lyft, featuring elegant BMW 5-Series sedans loaded with self-driving gear from Aptiv, the autonomous tech company spun off from auto parts giant Delphi last year. The following night, Intel CEO Brian Krzanich fired back, unveiling the Intel AV compute platform. It's made up of two new EyeQ5 sensor processing chips from recently acquired Mobileye and the new Intel Atom 3xx4 CPU that provide 60% more performance than Nvidia's Drive Xavier while using less power — 10 watts versus 30 watts for its competitor. <https://www.lyft.com/self-driving-vehicles/engineers> **Commentary: Lyft provides Self Driving Cars (system) for ride sharing. The self driving cars of LYFT are equipped with Intel hardware (processor and memory) having some software instructions stored (programming instruction) which would help an autonomous vehicle to operate. The processor and memory are coupled to process the stored instruction in every computer.**

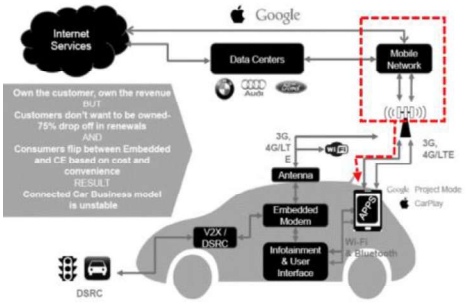
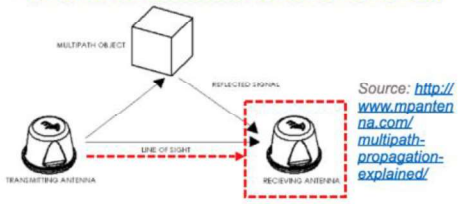
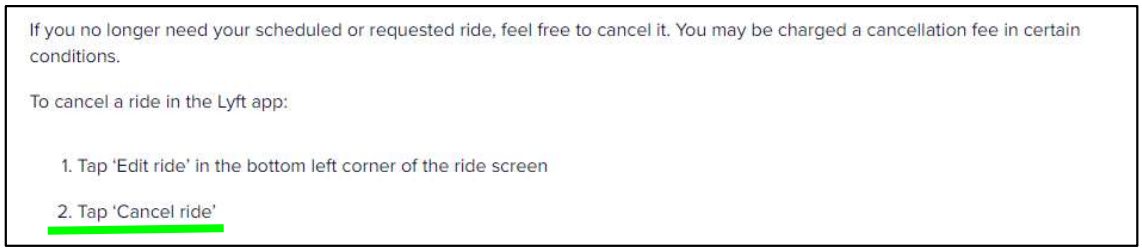
US10127818 B2 **Claim 1**	**Lyft and Motional- Self Driving Cars**
the system comprising: program instructions stored on the non-transient computer-readable storage medium, the non transitory program instructions operable to during a first time period:	 Source: https://www.lyft.com/self-driving-vehicles/passengers  Source: https://www.digitaltrends.com/cars/lyft-and-aptivs-self-driving-car-program-has-come-a-long-way-but-not-far-enough/ **Lyft Partners with Drive.ai** As we work toward this not-so-distant future, Lyft will continue to partner with key players within the industry to build the world's best transportation ecosystem, as well as safely introduce self-driving cars to our streets. That's why today, we're thrilled to announce our partnership with Drive.ai to bring self-driving cars to the Bay Area on Lyft's open platform. Founded by former labmates out of Stanford University's Artificial Intelligence Lab, Drive.ai is building the brain of the self-driving car. Through a deep learning-first approach, Drive.ai creates artificial intelligence software for self-driving cars. This provides a fast, scalable, and cost-efficient approach to the development of this technology. In order to bring its technology to market, Drive.ai is developing retrofit kits that transform traditional vehicles into self-driving models. <https://blog.lyft.com/posts/2017/9/6/lyft-partners-with-driveai> **Commentary: Lyft provides Self Driving Cars (system) for ride sharing. The self driving cars of LYFT are equipped with Intel hardware (processor and memory) having some software instructions stored (programming instruction) which would help an autonomous vehicle to operate. The processor and memory are coupled to process the stored instruction in every computer.**

US10127818 B2 Claim 1	Lyft and Motional- Self Driving Cars
process a first pre-determined location for the a substantially autonomous vehicle to navigate to,	SELF-DRIVING **How do self-driving cars work** To reach a destination, a driverless car needs to know the route, understand its surrounding, observe traffic rules, and make correct judgments when interacting with other vehicles and pedestrians on the road. To accomplish all this, it relies on the following key technologies: **Get ready to take your first ride** 1 **Watch your phone** If you're in a city with self-driving cars on the Lyft network, keep an eye out for an in-app notification to join our self-driving rollout. 2 **How to get a car** You don't need to specifically request a self-driving ride. Just enter your pickup and drop-off location like you usually do, and we'll let you know if there's a self-driving car available. 3 **Have a guide for every ride** When you hop in, you'll see both a pilot and co-pilot up front — a trained (human) duo that will keep an eye on things and ensure your ride goes smoothly. Ride - Request A `POST` to the `/rides` endpoint allows your application to request a ride on behalf of the user. The user's payment credentials on file will be charged for the ride.  Source: https://developer.lyft.com/reference#ride-request  Source: https://play.google.com/store/apps/details?id=me.lyft.android&hl=en_US <https://www.lyft.com/self-driving-vehicles/passengers> **Commentary: Lyft provides Self Driving Cars can be used for ride sharing. A user can enter his pick up location (predetermined location) and book a ride. After receiving the ride, the autonomous vehicle will reach to your specific pick up point.**

US10127818 B2 Claim 1	Lyft and Motional- Self Driving Cars
wherein the first pre-determined location is retrieved at least in part from a first electromagnetic signal, and further wherein the first pre-determined location corresponds to an first input signal registered at a first user-interface of a first mobile communications device being physically separate to the substantially autonomous vehicle;	 <https://www.lyft.com/self-driving-vehicles/passengers> **Commentary: Using Lyft app installed on a mobile device (first user interface of mobile communications device), a user can define its pick up location (first predetermined location). The data packets sent from the mobile device and consisting of pickup location is converted to electromagnetic signals (Wi-Fi or Cellular) and transmitted to a cellular base station. The radio waves are sent by the cellular base station via multipath signals (electromagnetic waves) to a receiving antenna of an Lyft Autonomous vehicle**

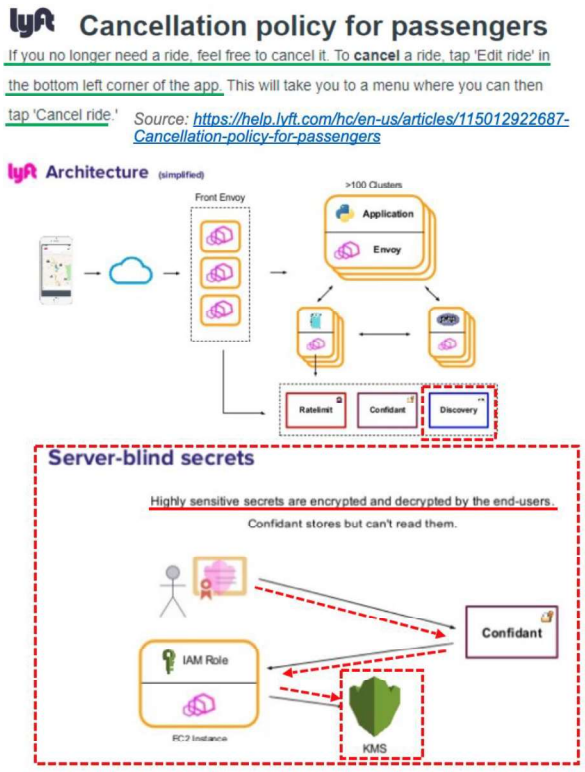
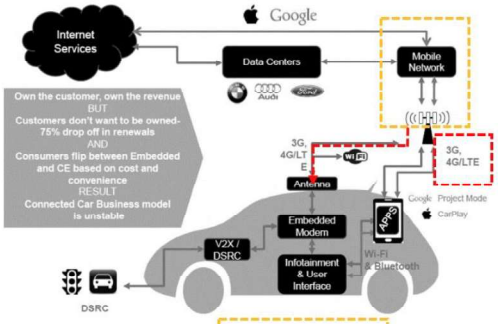
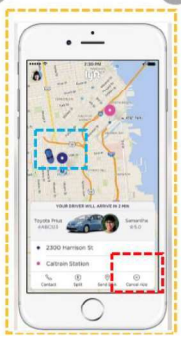
US10127818 B2 **Claim 1**	**Lyft and Motional- Self Driving Cars**
initiate a first path planning;	 Before the autonomous vehicle can reach a pickup, the vehicle will have to plan a path. Plaintiff contends that Autonomous Vehicles are equipped with maps, pre-loaded into its system allowing the vehicle to find a pickup**. "Current location to Palo alto Clatrain"**

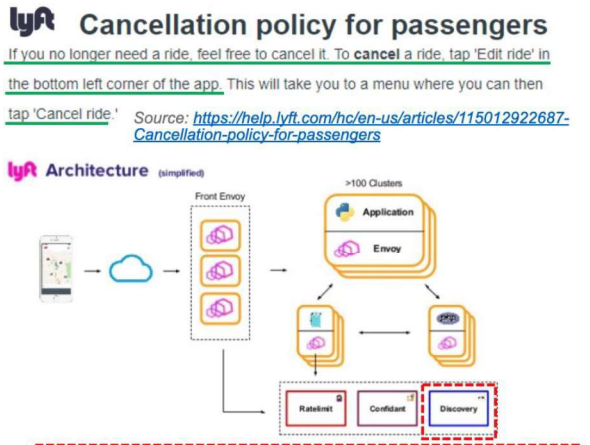
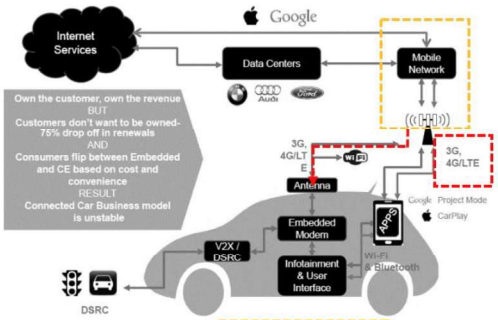
US10127818 B2 Claim 1	Lyft and Motional- Self Driving Cars
navigate the substantially autonomous vehicle towards the first pre-determined location;	 **to the pickup location using maps with a**

US10127818 B2 Claim 1	Lyft and Motional- Self Driving Cars
process an interruption signal retrieved at least in part from a second electromagnetic signal,	**Cancellation policy for passengers** If you no longer need a ride, feel free to cancel it. To **cancel** a ride, tap 'Edit ride' in the bottom left corner of the app. This will take you to a menu where you can then tap 'Cancel ride.' *Source: https://help.lyft.com/hc/en-us/articles/115012922687-Cancellation-policy-for-passengers* **How do self-driving cars work** To reach a destination, a driverless car needs to know the route, understand its surrounding, observe traffic rules, and make correct judgments when interacting with other vehicles and pedestrians on the road. To accomplish all this, it relies on the following key technologies:  *Source: https://take.lyft.com/open-platform/* **Ride - Cancel** A `POST` to the `/rides/<ride_id>/cancel` endpoint allows your application to cancel the specified ride.  *Source: https://developer.lyft.com/reference#ride-request-cancel*  *Source: http://www.mpantenna.com/multipath-propagation-explained/*  scenarios helps partners develop their systems around actual experiences and behaviors. Smart dispatching ensures the right vehicle is always dispatched for the right routes and conditions. <https://take.lyft.com/open-platform/> <https://play.google.com/store/apps/details?id=me.lyft.android&hl=en_US>  If you no longer need your scheduled or requested ride, feel free to cancel it. You may be charged a cancellation fee in certain conditions. To cancel a ride in the Lyft app: 1. Tap 'Edit ride' in the bottom left corner of the ride screen 2. Tap 'Cancel ride' https://help.lyft.com/hc/e/all/articles/115012922687-Cancel-and-no-show-policy-for-riders **" cancel a ride" you must sign into the app, then tap "cancel ride". The second electromagnetic signal from your phone to Uber to the Autonomous vehicle will be sent.**

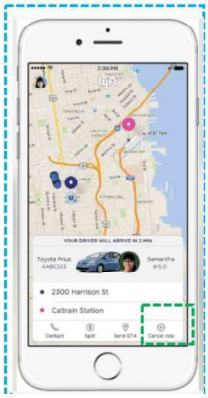
US10127818 B2 **Claim 1**	**Lyft and Motional- Self Driving Cars**
wherein the interruption signal interrupts the substantially autonomous vehicle from navigating to the first pre-determined location: and further wherein the interruption signal is processed	For Lyft Scheduled rides, we may charge a cancellation fee if: • You cancel the ride within 1 hour of pick-up time, and a driver has been matched. • The driver is on their way to pick you up. • The driver is scheduled to arrive within the designated pickup window. https://help.lyft.com/hc/e/all/articles/115012922687-Cancel-and-no-show-policy-for-riders **The interruption signal "Cancel the ride" interrupts the autonomous vehicle from navigating to the first location "The driver is on their way" (means that the vehicle is already going to the first location before the change or cancellation happens.**

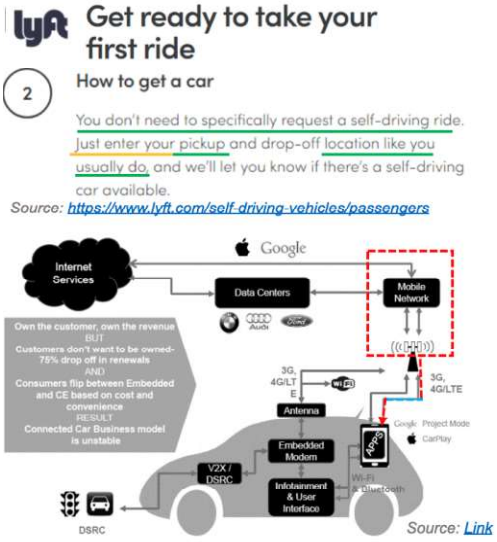
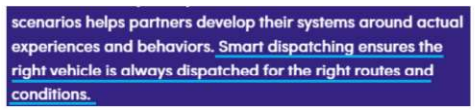
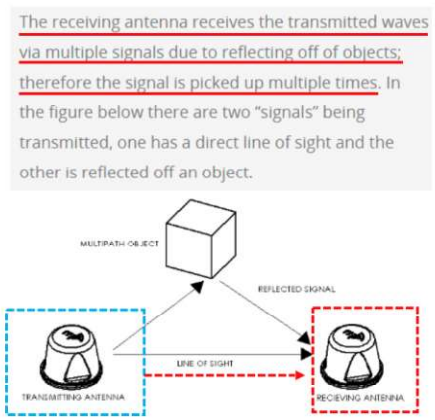
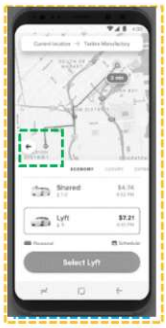
US10127818 B2 **Claim 1**	**Lyft and Motional- Self Driving Cars**
immediately prior to processing a first braking instruction	After creating a set of constraints to follow along a particular path, a large number of possible trajectories are generated, and then the most optimal path forward to satisfy these constraints is selected. These instructions are then transformed by the system controller into a set of instructions for steering, brake, and throttle commands. <https://help.lyft.com/hc/en-us/articles/115012922687-Cancellation-policy-for-passengers> Plaintiff contends the Lyft software, for example **"these instructions are then transformed by the system controller into a set of instructions for steering, brake and throttle commands."** can process a braking instruction**.**

US10127818 B2 Claim 1	Lyft and Motional- Self Driving Cars
and a first data decrypting instruction	   Source: https://www.slideshare.net/DanielHochman/open-source-infrastructure-at-lyft Source: http://www.newsandsentinel.com/news/business/2017/02/lyft-arrives-in-the-mid-ohio-valley/ <https://help.lyft.com/hc/en-us/articles/115012922687-Cancellation-policy-for-passengers>. The interruption signal to cancel a scheduled ride is processed immediately prior to a first braking instruction that is used to stop the vehicle from arriving at the first predetermined location and prior to a first data decrypting "**3G, 4G, LTE**" instruction sent from the **service** to the vehicle, to stop the vehicle.

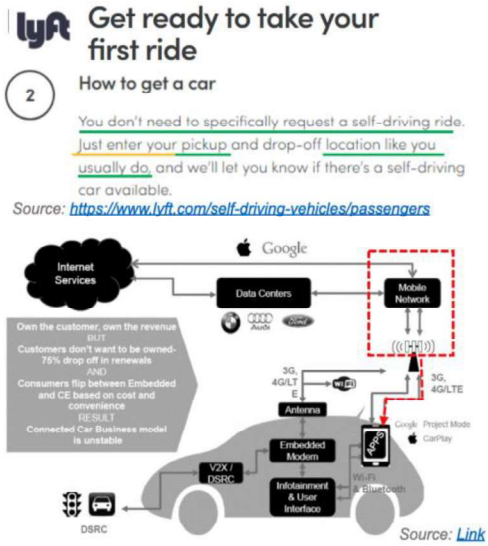
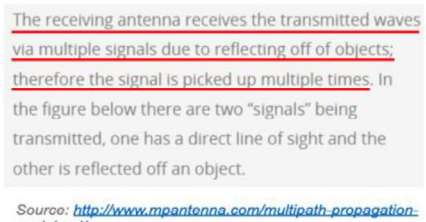
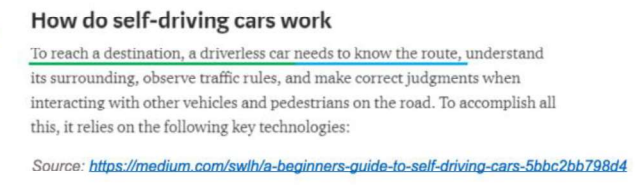
US10127818 B2 Claim 1	Lyft and Motional- Self Driving Cars
and immediately consecutive to processing a control data packet: recognize the interruption signal corresponds to a third party system foreign to the substantially autonomous vehicle; and wherein the interruption signal is indicative of a cancellation of a requirement for the substantially autonomous vehicle to navigate to the first pre-determined location, and	  Source: https://www.slideshare.net/DanielHochman/open-source-infrastructure-at-lyft  Source: http://www.newsandsentinel.com/news/business/2017/02/lyft-arrives-in-the-mid-ohio-valley/ <https://help.lyft.com/hc/en-us/articles/115012922687-Cancellation-policy-for-passengers> **Lyft App allows a user on a mobile phone using a third party system "mobile network" to "cancel" a ride (interruption signal) while the driver is on route to the pickup location (prior to braking instruction). The ride cancellation command is sent over the network in the form of a data packet which is then received by a self driving car antenna. All the instructions are being decrypted and processed by autonomous vehicle software.**

US10127818 B2 **Claim 1**	**Lyft and Motional- Self Driving Cars**

further wherein the interruption signal corresponds to an second input signal registered at the first user-interface of the first mobile communications device;
 	
immediately and ire direct response to the processing of the interruption signal,
	Ride - Cancel
	A `POST` to the `/rides/<ride_id>/cancel` endpoint allows your application to cancel the specified ride.
	ride_type string — REQUIRED. Ride type; supported values depend on your location, check Availability - Ride Types for acceptable values (possible examples include `lyft`, `lyft_plus`, etc).
	primetime_confirmation_token string — (Deprecated) Prime Time Confirmation token. See below for more information.
	cost_token string — Cost token. See below for more information.
	If you receive this kind of response (with a `cancel_confirmation_required` error) the ride hasn't been cancelled yet. This is because the ride has reached a stage where— if cancelled —your user would incur a cancellation fee. The fee itself is listed in the `amount` and `currency` fields in this response; in your application, the user *should* be presented with this information in some form, and a chance to confirm or deny the cancellation. In some regions, the cancellation fees provided is subject to additional regional taxes and surcharges which will be reflected in the final ride receipt.
	If the user agrees, use the supplied `<token>` as your `cancel_confirmation_token` in your next request. Note that the `<token>` is only valid for `token_duration` seconds. If your `<token>` expires, you'll have to re-request one, and it might include a different cancellation fee returned by `amount`. Again, if that happens, you should communicate the new fee to your user before using the `<token>` to fully cancel their ride.
	Below is an example request including the `<token>` returned above to confirm the cancellation, along with piped grep to isolate the HTTP status code returned. If it's accepted, the request will return an `HTTP 204` success code, your user's ride will be cancelled, and their Lyft account will be charged the `<amount>` cancellation fee.
	
	Example Confirmation Response
	`HTTP/1.1 400 - Bad Request`
	`Content-Type: application/json`
	`{ "error": "cancel_confirmation_required", "error_detail": [ { "cancel_confirmation": "a valid cancel_confirmation_token is required to car } ], "amount": 500, "currency": "USD", "token": "656a91d", "token_duration": 60 }`
	
	 
	Source: http://www.newsandsentinel.com/news/business/2017/02/lyft-arrives-in-the-mid-ohio-valley/
	
	<https://developer.lyft.com/reference#ride-request-cancel>
	
	Commentary: To Cancel a ride from the Lyft App, User needs to tap cancel button from its mobile device. The request from the mobile device reaches to server for further processing.

US10127818 B2 Claim 1	Lyft and Motional- Self Driving Cars
process a second pre-determined location for the substantially autonomous vehicle to navigate to and perform a second path planning for the second pre determined location, wherein the second pre-determined location is retrieved at least in part from a third electromagnetic signal and further wherein the second pre-determined location corresponds to a second input signal registered at a second user-interface of a second mobile communications device being physically separate to the substantially autonomous vehicle:	  Source: https://take.lyft.com/open-platform/   Source: https://play.google.com/store/apps/details?id=me.lyft.android&hl=en_US How do self-driving cars work To reach a destination, a driverless car needs to know the route, understand its surrounding, observe traffic rules, and make correct judgments when interacting with other vehicles and pedestrians on the road. To accomplish all this, it relies on the following key technologies: Source: https://medium.com/swlh/a-beginners-guide-to-self-driving-cars-5bbc2bb798d4 <https://www.lyft.com/self-driving-vehicles/passengers> **Commentary: Multiple user having the Lyft App on their device can request a ride. Each user having a different Lyft Account (user interface) on a different mobile device (mobile communication device) can enter a new pickup location (pre-determined location) instructing the vehicle to navigate. The data packets sent from the mobile device and consisting of pickup location is converted to electromagnetic signals (Wi-Fi or Cellular) and transmitted to a cellular base station.**

US10127818 B2 **Claim 1**	**Lyft and Motional- Self Driving Cars**
program instructions stored on the non-transient computer-readable storage medium, the non-transitory program instructions operable to during a second time-period:	lyft **Level 5 self-driving division** Our mission at Level 5 is to build the leading self-driving system for ridesharing. From offices in Palo Alto, Munich, and London, our team of over 300 world-class engineers is testing our autonomous vehicles on public roads in California. We believe in a future where self-driving cars make transportation safer and more accessible for everyone.With fewer cars on the road and less pollution in the air, we can reshape cities around people instead of cars. Source: https://www.lyft.com/self-driving-vehicles/engineers  Source: https://www.lyft.com/self-driving-vehicles/passengers  Source: https://www.digitaltrends.com/cars/lyft-and-aptivs-self-driving-car-program-has-come-a-long-way-but-not-far-enough/ A notable change from 2017 when just a handful robotic vehicles were available for parking lot rides: There are lots roaming Las Vegas this year. The biggest fleet was operated by Lyft, featuring elegant BMW 5-Series sedans loaded with self-driving gear from Aptiv, the autonomous tech company spun off from auto parts giant Delphi last year. The following night, Intel CEO Brian Krzanich fired back, unveiling the Intel AV compute platform. It's made up of two new EyeQ5 sensor processing chips from recently acquired Mobileye and the new Intel Atom 3xx4 CPU that provide 60% more performance than Nvidia's Drive Xavier while using less power — 10 watts versus 30 watts for its competitor. **Lyft Partners with Drive.ai** As we work toward this not-so-distant future, Lyft will continue to partner with key players within the industry to build the world's best transportation ecosystem, as well as safely introduce self-driving cars to our streets. That's why today, we're thrilled to announce our partnership with Drive.ai to bring self-driving cars to the Bay Area on Lyft's open platform. Founded by former labmates out of Stanford University's Artificial Intelligence Lab, Drive.ai is building the brain of the self-driving car. Through a deep learning-first approach, Drive.ai creates artificial intelligence software for self-driving cars. This provides a fast, scalable, and cost-efficient approach to the development of this technology. In order to bring its technology to market, Drive.ai is developing retrofit kits that transform traditional vehicles into self-driving models. Source: https://blog.lyft.com/posts/2017/9/6/lyft-partners-with-driveai <https://www.lyft.com/self-driving-vehicles/engineers> **Commentary: The self driving cars of Lyft are equipped with Intel hardware (processor and memory) having some software instructions stored (programming instruction) which would help an autonomous vehicle to operate.**

US10127818 B2 Claim 1	Lyft and Motional- Self Driving Cars
process a third-predetermined location for the substantially autonomous vehicle to navigate to, wherein the third predetermined location is retrieved at least M part from a fourth electromagnetic signal and further wherein the third pre-determined location corresponds to a third input signal registered at a third user interface of a third mobile communications device being physically separate to the substantially autonomous vehicle: initiate a third path planning; navigate the substantially autonomous vehicle towards the third pre-determined location:	    <https://www.lyft.com/self-driving-vehicles/passengers> **Commentary: Multiple user having the Lyft App on their device can request a ride. Each user having a different Lyft Account (user interface) on a different mobile device (mobile communication device) can enter a new pickup location (pre-determined location) instructing the vehicle to navigate. The data packets sent from the mobile device and consisting of pickup location is converted to electromagnetic signals (Wi-Fi or Cellular) and transmitted to a cellular base station. The radio waves are sent by the cellular base station via multipath signals (electromagnetic waves) to a receiving antenna of an Lyft Autonomous vehicle**

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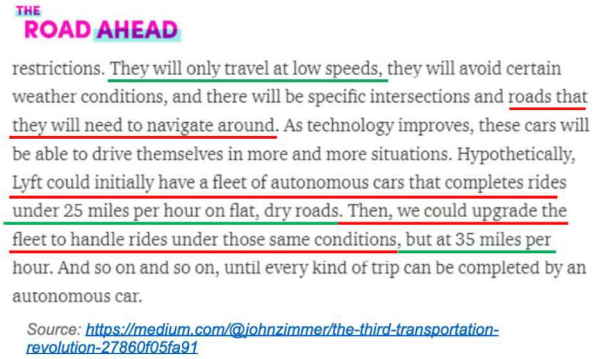
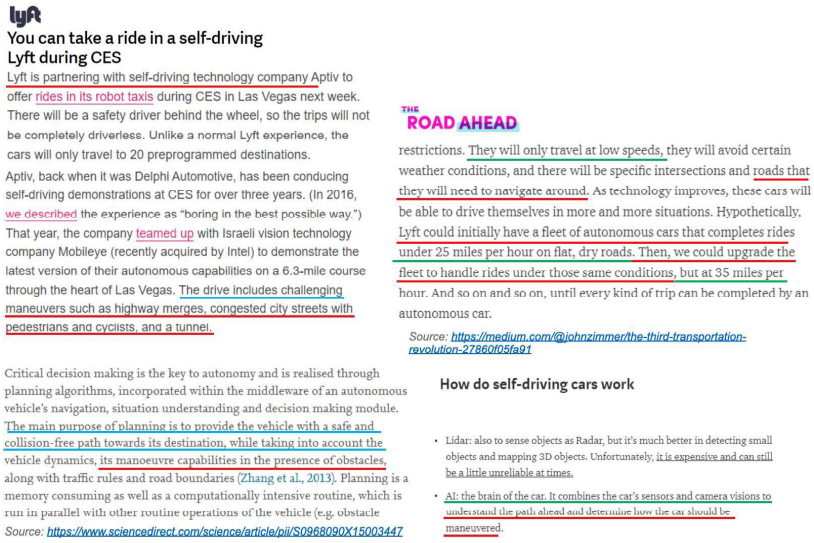
identify an emission that corresponds to an emergency vehicle from an aspect of a captured empirical data	Motional robotaxis, for example, will have microphones that can detect sirens from oncoming emergency responders. The driverless vehicle will know how to combine that sound with other sensor data to determine what direction the emergency responder is heading, decide whether it needs to pull over, and identify a safe place to do so. https://motional.com/news/driverlessed-chapter-7-outside-your-ride **Lyft self-driving cars are equipped with many sensors (cameras, radar, Microphones etc.) which can identify an emission "sirens" that corresponds to an "emergency vehicle" from an aspect of a captured empirical data "microphones"** that would need to be placed outside the car**.**

US10127818 B2 Claim 1	Lyft and Motional- Self Driving Cars
manoeuvre the substantially autonomous vehicle to avoid obstructing a route of the emergency vehicle; and	lyft **You can take a ride in a self-driving Lyft during CES** Lyft is partnering with self-driving technology company Aptiv to offer rides in its robot taxis during CES in Las Vegas next week. There will be a safety driver behind the wheel, so the trips will not be completely driverless. Unlike a normal Lyft experience, the cars will only travel to 20 preprogrammed destinations. Aptiv, back when it was Delphi Automotive, has been conducing self-driving demonstrations at CES for over three years. (In 2016, we described the experience as "boring in the best possible way.") That year, the company teamed up with Israeli vision technology company Mobileye (recently acquired by Intel) to demonstrate the latest version of their autonomous capabilities on a 6.3-mile course through the heart of Las Vegas. The drive includes challenging maneuvers such as highway merges, congested city streets with pedestrians and cyclists, and a tunnel.  THE ROAD AHEAD restrictions. They will only travel at low speeds, they will avoid certain weather conditions, and there will be specific intersections and roads that they will need to navigate around. As technology improves, these cars will be able to drive themselves in more and more situations. Hypothetically, Lyft could initially have a fleet of autonomous cars that completes rides under 25 miles per hour on flat, dry roads. Then, we could upgrade the fleet to handle rides under those same conditions, but at 35 miles per hour. And so on and so on, until every kind of trip can be completed by an autonomous car. Source: https://medium.com/@johnzimmer/the-third-transportation-revolution-27860f05fa91 Critical decision making is the key to autonomy and is realised through planning algorithms, incorporated within the middleware of an autonomous vehicle's navigation, situation understanding and decision making module. The main purpose of planning is to provide the vehicle with a safe and collision-free path towards its destination, while taking into account the vehicle dynamics, its manoeuvre capabilities in the presence of obstacles, along with traffic rules and road boundaries (Zhang et al., 2013). Planning is a memory consuming as well as a computationally intensive routine, which is run in parallel with other routine operations of the vehicle (e.g. obstacle Source: https://www.sciencedirect.com/science/article/pii/S0968090X15003447 **How do self-driving cars work** • Lidar: also to sense objects as Radar, but it's much better in detecting small objects and mapping 3D objects. Unfortunately, it is expensive and can still be a little unreliable at times. • AI: the brain of the car. It combines the car's sensors and camera visions to understand the path ahead and determine how the car should be maneuvered. <https://www.theverge.com/2018/1/2/16841090/lyft-aptiv-self-driving-car-ces-2018> <https://medium.com/swlh/a-beginners-guide-to-self-driving-cars-5bbc2bb798d4> **A safe, conservative approach to testing** We employ a systematic, multi-staged testing program that includes simulation, closed course, and on-road testing. We contend that a systems approach to autonomous development requires testing on public roads in challenging, real-world urban and suburban operational design domains (ODD). These dynamic ODDs are critical as they represent the hybrid mobility system of the future, where vehicles with dedicated automated driving systems will safely share the road with pedestrians, bicyclists, scooter riders, transit vehicles, emergency vehicles, and other road users. Motional robotaxis, for example, will have microphones that can detect sirens from oncoming emergency responders. The driverless vehicle will know how to combine that sound with other sensor data to determine what direction the emergency responder is heading, decide whether it needs to pull over, and identify a safe place to do so. **https://autonomous.lyft.com/wp-content/uploads/2020/06/Safety_Report_2020.pdf** Plaintiff contends the autonomous vehicle makes predictions as to other vehicle routes around it and pedestrians in order to decide its own route. So, if an emergency vehicle comes into the vicinity, a similar route prediction analysis will be made by the self driving vehicle in order to determine its own course of action. Self-driving cars are equipped with cameras and sensors which can enable the autonomous vehicle to manoeuvre and avoid for example **" manoeuvre capabilities"** obstructing a route of an emergency vehicle for example, **"decide whether it needs to pull over, and identify a safe place to do so".**

US10127818 B2 **Claim 1**	**Lyft and Motional- Self Driving Cars**
wherein the manoeuvre occurs wherein the substantially autonomous vehicle is greater than 20.2 to 22.5 meters from the third pre-determined location, and wherein the manoeuvre is performed at a speed of between 0.0001 km/h and 130 km/hr.	 lyft You can take a ride in a self-driving Lyft during CES Lyft is partnering with self-driving technology company Aptiv to offer rides in its robot taxis during CES in Las Vegas next week. There will be a safety driver behind the wheel, so the trips will not be completely driverless. Unlike a normal Lyft experience, the cars will only travel to 20 preprogrammed destinations. Aptiv, back when it was Delphi Automotive, has been conducing self-driving demonstrations at CES for over three years. (In 2016, we described the experience as "boring in the best possible way.") That year, the company teamed up with Israeli vision technology company Mobileye (recently acquired by Intel) to demonstrate the latest version of their autonomous capabilities on a 6.3-mile course through the heart of Las Vegas. The drive includes challenging maneuvers such as highway merges, congested city streets with pedestrians and cyclists, and a tunnel. THE ROAD AHEAD restrictions. They will only travel at low speeds, they will avoid certain weather conditions, and there will be specific intersections and roads that they will need to navigate around. As technology improves, these cars will be able to drive themselves in more and more situations. Hypothetically, Lyft could initially have a fleet of autonomous cars that completes rides under 25 miles per hour on flat, dry roads. Then, we could upgrade the fleet to handle rides under those same conditions, but at 35 miles per hour. And so on and so on, until every kind of trip can be completed by an autonomous car. Source: https://medium.com/@johnzimmer/the-third-transportation-revolution-27860f05fa91 Critical decision making is the key to autonomy and is realised through planning algorithms, incorporated within the middleware of an autonomous vehicle's navigation, situation understanding and decision making module. The main purpose of planning is to provide the vehicle with a safe and collision-free path towards its destination, while taking into account the vehicle dynamics, its manoeuvre capabilities in the presence of obstacles, along with traffic rules and road boundaries (Zhang et al., 2013). Planning is a memory consuming as well as a computationally intensive routine, which is run in parallel with other routine operations of the vehicle (e.g. obstacle Source: https://www.sciencedirect.com/science/article/pii/S0968090X15003447 How do self-driving cars work • Lidar: also to sense objects as Radar, but it's much better in detecting small objects and mapping 3D objects. Unfortunately, it is expensive and can still be a little unreliable at times. • AI: the brain of the car. It combines the car's sensors and camera visions to understand the path ahead and determine how the car should be maneuvered. <https://www.theverge.com/2018/1/2/16841090/lyft-aptiv-self-driving-car-ces-2018> <https://medium.com/swlh/a-beginners-guide-to-self-driving-cars-5bbc2bb798d4> When the reaction time is included, a car going 20 mph will travel about 64 feet before stopping, and one going 40 mph will go about 168 extra feet before it stops. A vehicle going 60 mph on the highway will have a reaction distance of 312 feet, and one traveling at a speed of 80 mph will travel an additional 496 feet before stopping. Simply put, doubling the car's rate of speed will multiply the distance it takes to stop about three times at these speeds. **https://desimonelawoffice.com/blog/how-long-does-it-take-to-stop-a-moving-vehicle/#:~:text=One%20going%2025%20mph%20will,the%20square%20of%20its%20velocity.** **Plaintiff contends that Lyft and Motional Self driving Cars or any autonomous vehicle, has the capability to manoeuvre around vehicles on the way to its destination (means the distance to destination is greater than 20.2 – 22.5 meters). Moreover, Uber and Waymo autonomous vehicles "won't exceed 25 mph" (that is 40 km/hr). Hence the manoeuvreing must also be occurring in the defined speed limit.**

	An autonomous vehicle going " 20 mph will travel about 64 feet before stopping" or about 20.2 meters to stop safely, therefore it would make sense for an autonomous vehicle to only manoeuvre, if the distance to a pick up location is greater than 20.2-22.5 meters.